

**RMP Technical Review Committee Meeting  
December 13th, 2005  
San Francisco Estuary Institute  
Meeting Minutes**

In attendance: Bridgette Deshields (BBL/WSPA), Andy Gunther (AMS), Mike Kellogg (City and County of San Francisco), Jim McGrath (SFEI Board), Francois Rodigari (EBMUD), Chris Sommers (EOA-BASMAA), Karen Taberski (Regional Board), Mike Connor (SFEI), Jay Davis (SFEI), Sarah Lowe (SFEI), Lester McKee (SFEI), Jon Oram (SFEI), Meg Sedlak (SFEI), Bruce Thompson (SFEI), and Don Yee (SFEI)

By telephone: Dave Tucker (City of San Jose)

**1. Introductions and Approval of Agenda and Minutes**

Karen Taberski opened the meeting by asking for comments on the September 2005 minutes. Ms. Taberski requested several editorial changes be made. Pending these changes the minutes were approved.

Meg Sedlak indicated that many of the action items were on-going issues to be addressed as part of the prioritization of Status and Trends. Mike Connor indicated that a preliminary meeting had been held with Bruce Wolfe to discuss the possibility of the South Bay Salt Pond (SBSP) contributing to the RMP. Both parties indicated that it would be helpful for the RMP to compile data from the various monitoring projects that are being undertaken by the SBSP into one location that could be easily accessed by a variety of stakeholders (e.g., a web query tool).

Francois Rodigari introduced himself and indicated that he would be representing BACWA members as Diane Griffin of EBMUD recently resigned.

A table of action items follows these meeting minutes.

**Action item: Include action items from the December 2005 meeting into the action items previously developed.**

**2. Information: October Steering Committee Report**

Meg Sedlak provided a brief summary of the Steering Committee (SC) meeting on October 24<sup>th</sup>, 2005. The SC approved the 2006 program plan and \$25,000 for the SBSP restoration project. It was requested that SBSP funding be listed as a separate line item in the 2006 budget (i.e., that contingency funds not be used). The SC also approved setting aside \$25,000 each year for the 2008 Program

Review. It is anticipated that this review will consist of invited experts and select workgroup participants. The estimated cost for this review is \$75,000.

The TRC suggested that Steve Weisberg of SCCWRP might be an appropriate chair as he has familiarity with the program and has served on previous RMP review panels. Other suggestions for panel members included: Denise Reed (SBSP), Kevin Sommers (USEPA), and Ed Smith (USEPA?).

### **3. Information: 2006 Pulse and Annual Meeting**

Jay Davis presented an outline for the 2006 Pulse. Three ideas were supported by the TRC: a PCB synthesis article (Jay Davis); a trends in phytoplankton article (Jim Cloern of USGS); and an improved contamination index (Bruce Thompson). With regard to the phytoplankton article, the Bay has changed substantially over time. It is less turbid and fall phytoplankton blooms now occur. Bruce Thompson indicated that the revised contaminant index would be ready in time for the Pulse. Jay Davis volunteered to write a short summary of the synthesis articles that were prepared this year. A suggestion was made to look at the Pelagic Organism Decline in the Delta. Another suggestion was an article on pyrethroids that could be tied into the episodic toxicity/PRISM studies that are being conducted around the Bay (potential contributors including Don Weston, Daniel Oros, Sarah Lowe). Another potential article could be a discussion of mercury issues surrounding wetland restoration projects in the Bay including Hamilton and the South Bay Salt Ponds – the group decided to consider this for inclusion in the 2007 Pulse when some initial data are available. Andy Gunther suggested an article that compared loadings developed in the early 1980s to more recent estimates as part of a retrospective look at 20 years of the RMP. Andy and Mike Connor agreed to discuss this theme further. A suggestion was made to have a sidebar on the South Bay Salt Pond.

Other ideas that the group did not want to pursue were an article on SWAMP, mercury cycling, and highlights from monitoring the Southern California Bight.

Jay Davis indicated that he was looking for suggestions for graphical highlights of non-RMP work.

Meg Sedlak stated that several venues were being explored for the 2006 Annual Meeting including: the Paramount Theater (too large?); the Asia-Pacific Center in Oakland; Kaiser Convention Center; and the Oakland Museum (assuming better signage and ushers).

### **4. Information: Water Board Staff Meeting on Information Needs and Priorities**

Meg Sedlak indicated that the RMP was embarking on a process to review the information needs and priorities for the Status and Trends program. As part of this, the RMP is in the process of soliciting input on a prioritization table that was

presented in September. It is hoped that in March all RMP participants will provide input on the table. As part of this prioritization process, power analyses are being conducted on the sport fish, sediment, and water sampling elements. The sport fish power analysis was completed by an outside consultant, Andy Jahn, in November and presented to the Fish Committee in November. Sediment and water power analyses will be completed in the Spring of 2006.

Karen Taberski presented a table of information needs identified by Regional Water Quality Control Board (RWQCB) staff. Ms. Taberski indicated that many staff members participated in the development of this table including Tom Mumley (Division Chief Planning/TMDLs), Dyan Whyte (Section Chief TMDLs/RMP Steering Committee), Steve Moore (Section Chief Planning), Richard Looker (Hg TMDL), Fred Hetzel (PCB TMDL), Tong Yin, Naomi Feger, and Beth Christian.

A copy of this table follows the minutes. A general discussion is presented here; specific recommendations are included in the table. RWQCB concurred with the recommendation to eliminate dissolved organics and only to analyze for totals (additional discussion is presented later in the minutes). Fred Hetzel at the RWQCB is concerned about the comparability of previous methods used to extract organics (e.g., polyurethane foam vs. XAD resin). Don Yee will contact Fred Hetzel to discuss. With regard to sediment, RWQCB recommended conducting a power analysis with the idea that perhaps some of the sites in the South Bay could be eliminated. RWQCB is interesting in pursuing sediment coring to provide answers to issues regarding erosion, deposition, flux, and depth of active layer. Jim McGrath presented an idea for characterizing sediment dynamics through measurement of sediment density in selected areas combined with predictions of wave energy. It was recommended that this idea be pursued as a possible special study.

RWQCB recommended that triennial sport fish monitoring occur in 2006; however, depending on the results of the power analyses, the RWQCB may recommend a different interval. The RWQCB is also interested in seeing whether endocrine disruption can be monitored in fish. A high priority is placed on the determination for what is causing sediment toxicity in the Bay. Aquatic toxicity should be conducted approximately every five years and chronic end points should be developed. With regard to benthic monitoring, there needs to be agreement among the stakeholders regarding a method for assessing benthos. The RWQCB places a high priority on developing effects thresholds for PBDEs. It is also important to understand the fate and distribution of perfluorinated compounds.

The TRC complimented Karen on her efforts to work with Board staff to develop a table of priorities. Lester McKee commented that small tributaries should be included in the table and Sarah Lowe suggested that the prioritization be tied back to management questions and RMP objectives.

**Action items: Don Yee will contact Fred Hetzel to discuss Fred's concerns regarding methods used to collect organics. SFEI staff will solicit input from all RMP participants on S&T prioritization table and discuss this at the January Steering Committee and March TRC meeting.**

**6. Discussion: 2005 Highlights and 2006 Workplan**

Each of the staff leads gave a short presentation on individual program elements that included major accomplishments in 2005 and plans for 2006. Each of these is summarized briefly below. Presentations are posted on the RMP website. Meg Sedlak requested that comments on the detailed workplan be received by the 15<sup>th</sup> of January.

**6a. Program Management**

Meg Sedlak outlined the program management activities completed in 2005 and those that would be undertaken in 2006. One of the major foci of 2005 was laboratory turn-around times. Ms. Sedlak indicated that most of the laboratories had completed the 2004 and were well on their way to reporting the 2005 data. It is anticipated that all but trace element water data will be in by February 2006. Also completed in 2005 were five-year workplans for the work groups. In 2006, a five-year workplan for the RMP will be completed. The workgroups were particularly active in 2005. In 2006, the RMP will convene a new workgroup on emerging contaminants. Ms. Sedlak reminded the group that the RMP is hosting the third annual Mercury Coordination meeting on February 22<sup>nd</sup> and is looking for speakers. Information regarding the meeting is posted on the web site. Presenters should contact Meg directly.

**6b. Data Management/ Web site**

Sarah Lowe presented an overview of the highlights of data management for 2005:

- Development of a new electronic data submittal format for the laboratories.
- Overall of the RMP web site.

The goals for data management for 2006 include the following:

- Continue to upload RMP data in SWAMP format;
- Continue to maintain web-based query tool;
- Develop a method for laboratories to submit data via the web; and
- Develop tools for increasing the efficiency of QA/QC review.

**6c. Information Management/ Annual Reporting**

Meg Sedlak highlighted accomplishments of information management in 2005 including production of the newsletter, ESTUARY insert, Pulse, and Annual Monitoring Results. Jay Davis commented that based on the Annual Meeting

survey these products were all well received. RMP staff presented at several meetings in 2005 and it is anticipated that this will continue in 2006. Copies of select posters can be seen on the RMP web site ([www.sfei.org/presentations\\_posters.html](http://www.sfei.org/presentations_posters.html)). Other activities included under this task include: preparation of posters and graphics for presentations, press outreach, and logistics coordination and development of graphics for the annual meeting.

**6d. QA/QC**

Don Yee summarized the highlights of 2005 which included:

- A comparison of different methods to collect organics (XAD resin sampler vs whole water grab samples);
  - Results indicate that approximately 60% of the PCBs are recovered using the XAD resin (dissolved) and glass filter (particulate fraction) as compared to the grab whole water samples.
  - This finding generated a fair amount of discussion as to the reasons why this might be the case. It was noted that the lower recovery was true across all congeners.
- New extraction methods for selenium to eliminate nitrate interference;
- New extraction method for organics from water to eliminate formation of PAHs during the extraction (referred to as the ambient temperature extraction method, conducted by AXYS analytical); and
- New instrumentation (HRGC-MS) in use by EBMUD. HRGC-MS will be used to analyze PCBs, pesticides, PBDEs, and PAHs.
- A mini-study by UCSC to look at the effect of sediment sample collection methods on methylmercury concentrations.

For 2006, QA/QC task will include the following:

- Revise the QAPP to conform with the SWAMP template and to include pilot and special studies;
- Conduct laboratory audits; and
- Continue calibration and validation of sampling and analysis.

**6e. Data Integration**

Jay Davis presented several of the accomplishments under the 2005 data integration task including the development of the multi-box model. Jay noted that many of the tasks were still on-going including:

- Preparation of a water quality index;
- Preparation of a wetland benthic assessment; and
- Continuation of work on the multi-box model.

Dr. Davis briefly summarized the 2006 data integration task that consists primarily of a multi-year scope of work jointly funded by RMP and CEP for fate modeling and field studies.

Major activities to be conducted in 2006 include:

- Application of the multi-box model to a second contaminant (mercury? Pesticides?);
- Preparation of a mercury atmospheric review paper;
- Pulse article on the Estuary Contamination Index; and
- Report on San Francisco Bay wetland benthos.

**6f. Status and Trends**

Sarah Lowe presented the highlights of the 2005 Status and Trends sampling; Ms. Sedlak presented a synopsis of the 2006 Status and Trends program. The 2005 S&T cruise was successful; however, it was noted that bivalves had a high mortality at all sites. RMP staff will look into the possible causes of the mortality. Ms. Sedlak indicated that the 2006 sampling program would be very similar to the 2005 sampling plan with the exception of the elimination of dissolved organics. A handout summarizing the pros and cons of eliminating dissolved organics was distributed to the Committee. On the basis of this presentation and the memo, the TRC voted to eliminate the analysis of dissolved organics (i.e., PCBs, PAHs, PBDEs, and pesticides). Only total organics will be analyzed.

The TRC also concurred with the recommendation that aquatic toxicity testing be deferred to 2007.

**6g. Status and Trends: Benthos**

Bruce Thompson gave a presentation on the Sediment Quality Objectives (SQOs) that are scheduled to be promulgated in 2007 and the rationale for the development of a benthic monitoring program within Status and Trends. The benthic monitoring would be used as a baseline for evaluation of the SQOs. In 2006, a workgroup would be convened to design a benthic program for 2007. It would include approximately 15 sites at an annual cost of \$60,000.

There was some discussion that the promulgation of the SQOs would be delayed (i.e., that the 2007 deadline would not be met). Karen Taberski indicated that the RWQCB has not yet begun discussing the implementation of the SQOs. In addition, there was concern over which type of test the RMP should use (e.g., test organism, duration, etc.). Several members felt that there was not adequate buy-in from the community for the SQOs and benthic assessments. As an example, it was noted that there are several different benthic assessment methods and at present, there is no agreement as to which method should be used.

The TRC recommended that this task be removed from Status and Trends program element and that Bruce convene a special workgroup to achieve consensus on the benthic assessment methodology and the SQOs. The TRC recommended that the \$10,000 proposed for planning under Status and Trends be used to achieve consensus on benthic assessments. This will be listed as a separate line item under special studies. Upon completion of the benthos

consensus task, the TRC would like to review the EEPS funding set aside for benthos (\$40,000). A work plan will need to be approved by the TRC for this funding.

**Action item: Bruce Thompson to convene a work group to evaluate benthic assessment methodologies and to achieve consensus on appropriate methodologies to use. Upon completion of this task, Bruce Thompson will prepare an EEPS work plan for benthos (~ \$40,000 project) for approval by the TRC.**

**6h. Status and Trends: Episodic Toxicity**

Sarah Lowe gave a brief update on episodic toxicity activities for 2005. Six tributaries were sampled in November 2004 and April 2005 at the upper and lower reaches of the streams. Sediment toxicity and sediment chemistry was conducted. In November, sediment toxicity was observed in San Mateo Creek (upper and lower), and San Lorenzo Creek (upper). In April, sediment toxicity was observed in San Mateo Creek (upper and lower) and Coyote Creek (upper). TIE testing from April did not identify the cause of toxicity and additional testing will be conducted. Pyrethroids were identified in samples collected in November and April.

In April 2005, aquatic toxicity was conducted at five tributaries and no toxicity was observed.

For 2006, the episodic toxicity program will focus on several tributaries known to be toxic. An iterative process will be initiated. If sediment/water is identified as toxic, then it will be resampled to determine the duration of the toxicity and TIE testing will be initiated to determine the causes of toxicity. A workgroup will be convened in early 2006 to begin planning for the winter 2006/2007. This work will be coordinated with work conducted under EEPS.

Sarah also handed out a five-year plan for the toxicity workgroup as well as a preliminary budget.

**6i. Status and Trends: Sport Fish Monitoring**

Jen Hunt presented a summary of the 2003 sport fish results. A report will be issued early in 2006. Ms. Hunt indicated that the format would be similar to a Pulse article.

RMP staff has begun planning for the 2006 sport fish sampling. A planning meeting was held on November 22, 2005 and a second meeting will be held on December 19<sup>th</sup>.

**6j. Special Study: Mercury Deposition Network (MDN)**

Don Yee gave a brief presentation on the results of the national Mercury Deposition Network. The San Jose site is one of two sites in California involved in the program. The second site is located in Sequoia National Park.

The Committee agreed to continue funding this project for 2006 at a cost of \$18,000 to the RMP. The City of San Jose will continue to provide in-kind contributions on the order of \$50,000 for the collection of samples. It was felt that these data are useful because it is one of the few urban measuring sites in the west and the only site in California.

**6k. Exposure and Effects Pilot Study and Exposure Effects Work Group**

Ms. Sedlak indicated that the work group had been particularly active in 2005. It had four meetings and prepared a five-year work plan. Approximately \$200,000 has been allocated for EEPS for the next four years (through 2008). Activities that were undertaken in 2005 included:

- Selenium Analysis of Diving Ducks
  - This program element will be dropped after 2005.
- Hg Analysis of Tern Eggs
  - This completes a set of analyses of Caspian, least and Forester tern eggs for mercury. Eggs were collected in 2002 and 2003.
- Analysis of Hg in Small Fish (3 Yr)
  - This is a new project that looking at the effects of mercury on small fish.
- E&E on Shiner Surfperch (2 Yr)
  - This is the first year of a two year project to look at the impact of contaminants on growth and fitness of shiner surfperch.
- Sediment Assessment
- Benthic Archive

In addition to the shiner surfperch study (\$50,000) and the mercury small fish study (\$40,000), EEPS had proposed an egg injection study for terns (\$40,000) and laboratory/field experiments for benthos (\$40,000). Based on recent discussions, it does not appear that an egg injection study will be feasible. EEPS will meet early in 2006 to decide how to reallocate this funding. As discussed above, the benthos EEPS funding will remain on hold until completion of the benthos consensus building task. At that time, a work plan will be prepared and submitted to the TRC for approval.

**6l. Special Study: Winter Pilot**

Based on the recommendation from the RWQCB, the TRC voted to cancel this pilot study for 2006. Seasonal variation remains a strong interest of the RWQCB and it is possible that this study will commence again in 2007.



**6mn. Special Study: River Loads and Reconnaissance Study to identify loading sites**

Dr. McKee provided of the three special studies that he is directing. The river loading study (\$51,000) is a continuation of previous years' Mallard Island work to determine sediment loads from the San Joaquin and Sacramento rivers. This project is jointly funded by the US Army Corps of Engineers, the RMP, and the Santa Clara Valley Water District. The purpose of the Guadalupe river study (\$50,000) is to accurately quantify mercury and PCB loads from a known contaminated tributary. The third special study (\$7,500) was to identify potential sampling locations in representative watersheds.

In 2006, the Mallard Island and Guadalupe studies will continue at similar funding levels.

**6o. Special Study: RMP/CEP Coring Study**

Don Yee presented the jointly-funded coring plan. Seventeen cores will be collected in 2006 from five segments of the Bay. Eleven of the cores will be advanced in the Bay; six will be advanced in wetland areas. The cores will be radio-dated using either lead or cesium and selected segments will be analyzed for PCBs, pesticides, and mercury. Three sites will be analyzed for PBDEs. The samples will be collected in February/March.

The coring plan and study was approved by the TRC. This project is jointly-funded by the CEP, which approved funding for the project in November 2005.

**7. Setting Date for Next Meeting**

The next meeting will be on March 21. The meeting was adjourned at 4:00 pm.

**ACTION ITEMS**

<b>ACTION</b>	<b>WHO</b>	<b>STATUS</b>
Look into whether recent data on PCB congeners can be provided electronically	David Dwinelle	
Bruce Wolfe of the Regional Board, Steve Ritchie and Mike Connor convene a meeting to discuss funding of SBSP.	Mike Connor	Mike Connor in the process of planning meeting.
To solicit input from all RMP participants on S&T prioritization table and discuss this at the March TRC meeting.	Meg Sedlak	
Develop a Five-Year Plan for the RMP that addresses management objectives and questions	Jay Davis	To be conducted after preparation of all workgroup five-year plans.
Convene a meeting of the workgroups with TRC to discuss long-term plans	Meg Sedlak/Jay Davis	To be conducted after completion of a five-year plan for RMP
Convene workgroup to look at emerging contaminants	Meg Sedlak	To be organized next quarter
Conduct power analyses of S&T program elements, prepare new table with priorities and potential recommendations	Meg Sedlak/Jay Davis	To be conducted next quarter.
Convene a work group to evaluate benthic assessment methodologies and to achieve consensus on appropriate methodologies to use (~\$10,000). Upon completion of this task, Bruce Thompson will prepare an EEPS work plan for benthos (~ \$40,000) for approval by the TRC.	Bruce Thompson	

### Water Board Information Needs and Positions on Redesign Proposal (12/5/2005)

At the request of RMP committees Water Board staff have developed this table. We anticipate the RMP redesign process taking several years. In addition, we see refinements and additions to the design of the RMP based on technical or management issues as an ongoing process. Therefore, this is a work in progress.

<b>Program Element/Issue</b>	<b>Information Needs</b>	<b>Positions on redesign proposal/other issues</b>
Water chemistry	<ol style="list-style-type: none"> <li>1. Assessment of WQOs</li> <li>2. Reasonable potential analysis for permitting</li> <li>3. Spatial and temporal trends</li> </ol>	<ol style="list-style-type: none"> <li>1. In favor of eliminating dissolved organics.</li> <li>2. In favor of eliminating the “CTR” winter sampling for 2006. We are evaluating what information we need for reasonable potential analysis and permitting for winter 2007.</li> <li>3. Would like to see an analysis of whether we can cut back on sampling (sites, analytes, frequency) based on * see footnote</li> <li>4. Recommend method comparability study for organics.</li> </ol>
Sediment chemistry	<ol style="list-style-type: none"> <li>1. For use in TMDLs/modeling</li> <li>2. Spatial patterns</li> <li>3. Status of segments</li> <li>4. Track long term system response (attainment of targets) and response to short-term actions (urban runoff)</li> <li>5. Erosive and depositional areas</li> <li>6. Flux from erosive areas</li> <li>7. Recovery/degradation of depositional areas</li> <li>8. Depth of active layer</li> </ol>	<ol style="list-style-type: none"> <li>1. After the collection of 5 years of S&amp;T data with the new design we would like to see an analysis of data by SFEI to determine if we may be able to cut back on the number of sites and frequency or refine the design and still address needs #1-4.</li> <li>2. Need better information for #5-8. (High priority)</li> </ol>

<b>Program Element/Issue</b>	<b>Information Needs</b>	<b>Positions on redesign proposal/other issues</b>
Bivalve bioaccumulation	Temporal trends, longest term dataset.	<ol style="list-style-type: none"> <li>1. In favor of eliminating the maintenance cruise.</li> <li>2. Not in favor of adding Horseshoe Bay or Yerba Buena Island to the sampling sites</li> </ol>
Sportfish bioaccumulation	<ol style="list-style-type: none"> <li>1. TMDL targets</li> <li>2. Human health exposure</li> <li>3. Potentially fish health – endocrine disruption</li> </ol>	<ol style="list-style-type: none"> <li>1. In favor of conducting sampling in 2006 but eliminating some species (shark) and increasing sample size.</li> <li>2. In favor of decreasing frequency of sampling and enlarging sample size.</li> <li>3. In favor of sampling Oakland Harbor on a less frequent sampling schedule than other sites.</li> <li>4. Would like to see if we could use these fish to evaluate potential endocrine disruption.</li> </ol>
Sediment toxicity	Assessment of potential impairment.	<p>Determining what is causing sediment toxicity is a high priority. Based on data wet weather sampling will be needed. In favor of a special study to determine:</p> <ol style="list-style-type: none"> <li>1. What may be causing sediment toxicity in Bay both contaminants and mechanisms and,</li> <li>2. If there is pyrethroid toxicity in tributaries and, if so, does it extend in to the Bay.</li> </ol>
Aquatic toxicity (Bay)	Assessment of potential impairment	In favor of conducting toxicity tests every 5 years with chronic endpoints.
Episodic toxicity	<ol style="list-style-type: none"> <li>1. Assessment of potential impairment</li> <li>2. Sources and pathways</li> </ol>	Waiting for results of RMP/PRISM study. If there is pyrethroid toxicity in tributaries, need to determine if it extends in to the Bay (see sediment toxicity, possibly merge). Possibly decrease frequency of S&T monitoring.
USGS studies	<ol style="list-style-type: none"> <li>1. Evaluation of loads from Mallard Island</li> <li>2. Useful for sediment transport model</li> <li>3. Basic water quality indicators</li> </ol>	In favor of retaining these components with possible refinements.

<b>Program Element/Issue</b>	<b>Information Needs</b>	<b>Positions on redesign proposal/other issues</b>
Benthos	Evaluation of SQOs	First, need process including local benthic ecologists, regulators and stakeholders to evaluate benthic indicator to get buy in. Agree with recommendation from EEPS SAC.
Cormorant eggs (in EEPS)	<ol style="list-style-type: none"> <li>1. TMDL target</li> <li>2. Temporal trends</li> <li>3. Detection of emerging contaminants</li> </ol>	In favor of incorporating in to Status and Trends
Bird eggs - near shore foragers (currently in EEPS)	<ol style="list-style-type: none"> <li>1. TMDL target</li> <li>2. Determine impairment</li> </ol>	Eventually incorporate in to S&T for contaminant concentrations. Evaluate effects (USFWS).
Small fish study (currently in EEPS)	<ol style="list-style-type: none"> <li>1. Trends at smaller spatial scales</li> <li>2. Food web modeling</li> </ol>	Need analysis of PCBs and Se as well as Hg. (High priority)
Mallard Island Study (currently in Sources and Loadings)	Evaluation of loadings from Central Valley.	In favor of incorporating in to Status and Trends
PBDEs	Need an effects threshold for PBDEs so that we can evaluate whether PBDEs are causing impairment.	Potentially under EEPS (High priority)
Emerging contaminants/endocrine disruption	Need to determine potential impairments/emerging problems	<ol style="list-style-type: none"> <li>1. Agree with adding PFOS to next round of sampling</li> <li>2. Support establishment of workgroup to determine how best to address this issue.</li> </ol>
Food web study	Need to understand transfer of contaminants through the food web for food web modeling	Proposed special study in coordination with other studies. (High priority)
Ammonium	Need to know if concentrations of ammonium are limiting phytoplankton blooms and to what extent.	Evaluation of data and possible special study.

\*Revisit power analysis for dissolved copper with site-specific objective. Review list of analytes based on: spatial and temporal trends, proximity to thresholds, need for model support, cost, use of surrogates.